

### **AMENDMENTS TO THE SPECIFICATION**

Please amend the paragraph beginning on line 16 of page 5 as follows:

Heat transfer by gas phase thermal conduction is less efficient than solid state thermal conduction. In a preferred embodiment, the present invention provides solid state thermal conduction in a gas generating membrane reactor where the reaction catalyst 28 is coated on the interior side 18 of the wall of a reactor, shown generally at 10 in Figure 1. A feed tube for mixed gases having a wall with an interior side 12 and an exterior side 14 conducts gases into the reactor 10. The reactor has a wall having an exterior side 16 and an interior side 18 coated with reaction catalyst 28. A tube 20 has a selective membrane allows the passage of a desired gas through a purified gas outlet 26 for collection. Raffinate gas exits through a passage 24.

Please amend the paragraph beginning on line 16 of page 6 as follows:

In a further preferred embodiment, the space between the catalyst on interior side of the wall and the membrane is filled by a multichannel monolith. This configuration extends solid state heat transfer throughout a reactor shown generally at 30 in Figure 2. Figure 2 specifically shows a configuration for generation of a syngas or higher hydrocarbon. However, it will be appreciated that the same reactor is configured for generation and collection of other desirable gases such as hydrogen by incorporating an appropriate membrane, an appropriate reaction catalyst and supplying appropriate starting gases as described herein and in U.S. Patent Nos. 5,888,273 and 5,931,987. The reactor 30 has a wall 32 that encloses a monolith 34 containing a channel 36 coated with a selective membrane and reaction catalyst. The monolith is sealed against the interior reactor wall using a gasket 38. An air inlet 40 is present on one side of the

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monolith 34 while a lower hydrocarbon inlet valve 42 is present on an opposing side of the monolith. Exit passages for a desired gas and a waste gas are present at 44 and 46 respectively.